

## CONTENTS

Adrenal Steroids and ACTH, by Prof. F. G. Young, *F.R.S.*, 75

Aerial Dispersal of Aphids, by C. G. Johnson, *Ph.D.*, *D.Sc.*, 19

Artificial Fibres, by R. W. Moncrieff, *B.Sc.*, *F.R.I.C.*, *F.T.I.*, 127, 141

Automatic Train Control, by J. H. M. Sykes, *A.I.E.E.*, 11

Automobile Development, by W. Harold Johnson, 335

Basis of Electromyography, by P. Bauwens, *M.R.C.S.*, 189

Biology of Hunting Spiders, by J. L. Cloudsley-Thompson, *M.A.*, *Ph.D.*, *F.L.S.*, 286

Can Machines Think? by M. V. Wilkes, *M.A.*, *Ph.D.*, 151

Chemical Engineering: The Fourth Technology, by E. A. Rudge, *Ph.D.*, *A.M.I. Chem.E.* 243

Chromatography Past and Present, by Trevor I. Williams, *B.A.*, *B.Sc.*, *D.Phil.*, 53

Coelacanth Fishes, by Errol White, *D.Sc.*, *F.G.S.*, 113

Culture Collections of Fungi, by H. A. Dade, *A.R.C.S.*, 219

Destructive Sea Waves and Surges, by G. E. R. Deacon, *D.Sc.*, *F.R.S.*, 139

Direction-finding in Birds, by G. V. T. Matthews, *M.A.*, *Ph.D.*, 145

Electrical Research for Farmers and Gardeners, by J. H. M. Sykes, *A.I.E.E.*, 210

Electronic-Flash Photomicrography, by D. P. Wilson, *D.Sc.*, *F.R.P.S.*, 347

Electrostatic Developments, by J. H. M. Sykes, *A.I.E.E.*, 321

Fifty Years of Powered Flight, by Sir Ben Lockspeiser, *K.C.B.*, *F.R.S.*, 384

Foreign Animals on British Shores, by Douglas P. Wilson, *D.Sc.*, *F.R.P.S.*, 206

Geology of Ornamental Stones, by Frederick A. Henson, *B.Sc.*, *Ph.D.*, *F.G.S.*, 214

Harnessing the Wind, by E. W. Golding, *M.Sc.Tech.*, *M.I.E.E.*, 373

Idea of Organic Evolution, by A. C. Crombie, *B.Sc.*, *Ph.D.*, 92

Ideas and Assumptions about the Origin of Life, by N. W. Pirie, *F.R.S.*, 238

John Dalton and the Rebirth of Atomism, by Frank Greenaway, *M.A.*, *F.R.I.C.*, 318

Lind and his "Treatise of the Scurvy", by Harry Hoggan, *M.A.*, *F.R.S.E.*, 259

Malthus and the Scientists, by Arthur Marsh, *M.A.*, 345

Marine Biological Research and its Practical Importance, by Prof. C. M. Yonge, *F.R.S.*, 181

Metals and Modern Aircraft, by Gordon Parr, *B.Sc.*, 157

Methane in the Service of Man, by L. T. Minchin, *B.Sc.*, *M.Inst.Gas.E.*, *M.Inst.F.*, 57

Military College of Science, by Major E. H. W. Bannerman, *M.Sc.*, *M.I.E.E.*, *F.Inst.P.*, 49

Mistletoe: Its Life and Legends, by B. Barnes, *D.Sc.*, *Ph.D.*, *F.L.S.*, 370

New Film Techniques, by Denis Segaller, *B.Sc.*, 311

New Weapons and Civil Defence, by Leonard Berlin, 154

Operation Totem, by Chapman Pincher, 366

Organisation of the Ant Colony, by Derek Wragge Morley, *M.A.*, *F.L.S.*, 45

Palladium and its Anonymous Discoverer, by A. K. Parker, *M.A.*, 342

Physical Society's Exhibition, by C. L. Boltz, 179

Plant Hormones, by Prof. S. C. Harland, *F.R.S.*, 350

Radio-Isotopes in Biology, by J. G. Feinberg, *B.S.*, *M.S.*, *D.V.M.*, 256

Radio-Isotopes in Medicine, by J. G. Feinberg, *B.S.*, *M.S.*, *D.V.M.*, 305

Research on Fatigue, by D. C. Fraser, *M.A.*, *M.Sc.*, 40

Revolution in Iron-Making, by Max Davies, *B.A.*, 61

Science for Its Own Sake, by Sir Edward Appleton, *G.B.E.*, *K.C.B.*, *F.R.S.*, 282

Science of Orchestral Instruments: Some Recent Work, by E. G. Richardson, *B.A.*, *Ph.D.*, *B.Sc.*, 87

Seventeenth-Century Revolution in Mathematical Physics, by A. C. Crombie, *B.Sc.*, *Ph.D.*, 23

Significance of Bacterial Polysaccharides, by Prof. M. Stacey, 271

Sleep and Oxygen Supply, by Chapman Pincher, 124

Social Animals and their Behaviour, by Derek Wragge Morley, *M.A.*, *F.L.S.*, 290

Soil Tilth: Its Scientific Aspects, by E. W. Russell, *M.A.*, *Ph.D.*, 118

Solar Energy Research in France, by M. Goldsmith, 279

Stack Problem of Atmospheric Pollution, by Prof. O. G. Sutton, *C.B.E.*, *F.R.S.*, *D.Sc.*, 203

Television outside the Entertainment Field, by Geoffrey Parr, *M.I.E.E.*, 83

The Advance to Supersonic Flight, by J. Black, *M.Sc.*, *Ph.D.*, *A.F.R.Ae.S.*, 250

The Age of Stonehenge, by I. W. Cornwall, *Ph.D.*, 276

The Insufferable Genius, by Egon Larsen, 79

Titanium, by S. W. Rowell, *B.A.*, and E. Swainson, *B.Met.*, 109

Underground Gasification, by L. T. Minchin, *B.Sc.*, *M.Inst.Gas.E.*, 6

Underwater Television and Marine Research, by H. Barnes, *Ph.D.*, *D.Sc.*, 172

Unicellular Algae as a Source of Food, by M. J. Geoghegan, *M.Agr.Sc.*, *Ph.D.*, 379

Widening Orbit of Powder Metallurgy, by H. W. Greenwood, 14

Xerography: A Non-chemical Photographic Process, by W. D. Oliphant, *B.Sc.*, *M.I.E.E.*, *F.Inst.P.*, 175

Accelerator, —, travel  
Acetate, —  
Acoustic, —  
ACTH, —, supports  
Action potential, —  
Adison, —  
Adhesive, 331  
Adrenal, —, steroid  
Adrian, —  
Adsorption, —  
Advanced, —  
Aerial photography, —  
Aeronautics, —  
Age-harvesting, —  
Agene, —  
Agriculture, —, Research  
Agricultural, 168  
Air flow, —  
— speed, —  
Aircraft, —, metal  
—, metal, 60,  
—, take-off, —  
Akers, —  
Albrecht, —  
Algae, —, unicellular  
Alginic acid, —  
Alloys, —  
American, —, atom  
—, hydrocarbon  
—, technique  
—, Type  
Aminotone, —  
Amino-acid, —, sugar  
Aminocarboxylic, —  
Amphibians, —  
Amplification, —  
Analysis, —  
Anderson, —  
Andrade, —  
Anglo-American, 3  
Antibiotics, —, and plants  
—, two new  
Anti-shrubs, 170  
Anti-tuberculosis, —  
Ants, 45,  
—, social  
Aphids, —  
Aphis fabae, —  
Appert, —

## CONTENTS

Adrenal Steroids and ACTH, by Prof. F. G. Young, *F.R.S.*, 75

Aerial Dispersal of Aphids, by C. G. Johnson, *Ph.D.*, *D.Sc.*, 19

Artificial Fibres, by R. W. Moncrieff, *B.Sc.*, *F.R.I.C.*, *F.T.I.*, 127, 141

Automatic Train Control, by J. H. M. Sykes, *A.I.E.E.*, 11

Automobile Development, by W. Harold Johnson, 335

Basis of Electromyography, by P. Bauwens, *M.R.C.S.*, 189

Biology of Hunting Spiders, by J. L. Cloudsley-Thompson, *M.A.*, *Ph.D.*, *F.L.S.*, 286

Can Machines Think? by M. V. Wilkes, *M.A.*, *Ph.D.*, 151

Chemical Engineering: The Fourth Technology, by E. A. Rudge, *Ph.D.*, *A.M.I. Chem.E.* 243

Chromatography Past and Present, by Trevor I. Williams, *B.A.*, *B.Sc.*, *D.Phil.*, 53

Coelacanth Fishes, by Errol White, *D.Sc.*, *F.G.S.*, 113

Culture Collections of Fungi, by H. A. Dade, *A.R.C.S.*, 219

Destructive Sea Waves and Surges, by G. E. R. Deacon, *D.Sc.*, *F.R.S.*, 139

Direction-finding in Birds, by G. V. T. Matthews, *M.A.*, *Ph.D.*, 145

Electrical Research for Farmers and Gardeners, by J. H. M. Sykes, *A.I.E.E.*, 210

Electronic-Flash Photomicrography, by D. P. Wilson, *D.Sc.*, *F.R.P.S.*, 347

Electrostatic Developments, by J. H. M. Sykes, *A.I.E.E.*, 321

Fifty Years of Powered Flight, by Sir Ben Lockspeiser, *K.C.B.*, *F.R.S.*, 384

Foreign Animals on British Shores, by Douglas P. Wilson, *D.Sc.*, *F.R.P.S.*, 206

Geology of Ornamental Stones, by Frederick A. Henson, *B.Sc.*, *Ph.D.*, *F.G.S.*, 214

Harnessing the Wind, by E. W. Golding, *M.Sc.Tech.*, *M.I.E.E.*, 373

Idea of Organic Evolution, by A. C. Crombie, *B.Sc.*, *Ph.D.*, 92

Ideas and Assumptions about the Origin of Life, by N. W. Pirie, *F.R.S.*, 238

John Dalton and the Rebirth of Atomism, by Frank Greenaway, *M.A.*, *F.R.I.C.*, 318

Lind and his "Treatise of the Scurvy", by Harry Hoggan, *M.A.*, *F.R.S.E.*, 259

Malthus and the Scientists, by Arthur Marsh, *M.A.*, 345

Marine Biological Research and its Practical Importance, by Prof. C. M. Yonge, *F.R.S.*, 181

Metals and Modern Aircraft, by Gordon Parr, *B.Sc.*, 157

Methane in the Service of Man, by L. T. Minchin, *B.Sc.*, *M.Inst.Gas.E.*, *M.Inst.F.*, 57

Military College of Science, by Major E. H. W. Bannerman, *M.Sc.*, *M.I.E.E.*, *F.Inst.P.*, 49

Mistletoe: Its Life and Legends, by B. Barnes, *D.Sc.*, *Ph.D.*, *F.L.S.*, 370

New Film Techniques, by Denis Segaller, *B.Sc.*, 311

New Weapons and Civil Defence, by Leonard Berlin, 154

Operation Totem, by Chapman Pincher, 366

Organisation of the Ant Colony, by Derek Wragge Morley, *M.A.*, *F.L.S.*, 45

Palladium and its Anonymous Discoverer, by A. K. Parker, *M.A.*, 342

Physical Society's Exhibition, by C. L. Boltz, 179

Plant Hormones, by Prof. S. C. Harland, *F.R.S.*, 350

Radio-Isotopes in Biology, by J. G. Feinberg, *B.S.*, *M.S.*, *D.V.M.*, 256

Radio-Isotopes in Medicine, by J. G. Feinberg, *B.S.*, *M.S.*, *D.V.M.*, 305

Research on Fatigue, by D. C. Fraser, *M.A.*, *M.Sc.*, 40

Revolution in Iron-Making, by Max Davies, *B.A.*, 61

Science for Its Own Sake, by Sir Edward Appleton, *G.B.E.*, *K.C.B.*, *F.R.S.*, 282

Science of Orchestral Instruments: Some Recent Work, by E. G. Richardson, *B.A.*, *Ph.D.*, *B.Sc.*, 87

Seventeenth-Century Revolution in Mathematical Physics, by A. C. Crombie, *B.Sc.*, *Ph.D.*, 23

Significance of Bacterial Polysaccharides, by Prof. M. Stacey, 271

Sleep and Oxygen Supply, by Chapman Pincher, 124

Social Animals and their Behaviour, by Derek Wragge Morley, *M.A.*, *F.L.S.*, 290

Soil Tilth: Its Scientific Aspects, by E. W. Russell, *M.A.*, *Ph.D.*, 118

Solar Energy Research in France, by M. Goldsmith, 279

Stack Problem of Atmospheric Pollution, by Prof. O. G. Sutton, *C.B.E.*, *F.R.S.*, *D.Sc.*, 203

Television outside the Entertainment Field, by Geoffrey Parr, *M.I.E.E.*, 83

The Advance to Supersonic Flight, by J. Black, *M.Sc.*, *Ph.D.*, *A.F.R.Ae.S.*, 250

The Age of Stonehenge, by I. W. Cornwall, *Ph.D.*, 276

The Insufferable Genius, by Egon Larsen, 79

Titanium, by S. W. Rowell, *B.A.*, and E. Swainson, *B.Met.*, 109

Underground Gasification, by L. T. Minchin, *B.Sc.*, *M.Inst.Gas.E.*, 6

Underwater Television and Marine Research, by H. Barnes, *Ph.D.*, *D.Sc.*, 172

Unicellular Algae as a Source of Food, by M. J. Geoghegan, *M.Agr.Sc.*, *Ph.D.*, 379

Widening Orbit of Powder Metallurgy, by H. W. Greenwood, 14

Xerography: A Non-chemical Photographic Process, by W. D. Oliphant, *B.Sc.*, *M.I.E.E.*, *F.Inst.P.*, 175

Accelerator, —, travel  
Acetate, —  
Acoustic, —  
ACTH, —, supports  
Action potential, —  
Adison, —  
Adhesive, 331  
Adrenal, —, steroid  
Adrian, —  
Adsorption, —  
Advanced, —  
Aerial photography, —  
Aeronautics, —  
Age-harvest, —  
Agene, —  
Agriculture, —, Research  
Agricultural, 168  
Air flow, —  
— speed, —  
Aircraft, —, metal  
—, metal, 60, —, take-off  
Akers, —  
Albrecht, —  
Algae, —, unicellular  
Alginic acid, —  
Alloys, —  
American, —, atom  
—, hydrocarbon  
—, technique  
—, Type  
Aminotone, —  
Amino-acid, —, sugar  
Aminocarboxylic, —  
Amphibians, —  
Amplification, —  
Analysis, —  
Anderson, —  
Andrade, —  
Anglo-American, 3  
Anoxia, —  
Anson, —  
Anthrenus, 134  
Antibiotics, —  
— and protein, —, two types  
Anti-shrubs, 170  
Anti-tuberculosis, —  
Ants, 45, —, social  
Aphids, —  
Aphis fabae, —  
Appert, —

## SUBJECT INDEX

### A

- Accelerators, 71-4
- , travelling-wave type of, 71
- Acetate rayon, 128-9
- Acoustic spectrum, 87, 88
- ACTH, 77
- , supplies of, 131
- Actinomycin, 331
- Action potentials, 189
- Addison, Thomas, 75
- Adhesives in metal aircraft construction, 331
- Adrenal glands, 75
- steroids, 75-7
- Adrenaline, 75
- Adrian, Prof., 136-7
- Adsorption chromatography, 2
- Advancement of Science*, 325
- Aerial photography, 107
- Aeronautical engineering, 64
- Age-hardening, 16, 157-9
- Agene, 195
- Agricultural research, 269
- Research Council, 269, 274
- Agricultural (Poisonous Substances) Act, 168
- Air flow, problems of, 5, 385
- speed records, 357
- Aircraft, 50 years of progress, 384
- , metals used for manufacture of, 157-60, 387
- , take-off and landing problems, 388
- Akers, Sir Wallace, 167, 194
- Albrecht, E., 54
- Algae, culture of, 379
- , unicellular, 333, 379
- Alginic fibres, 129
- Alginic acid, 129
- Alloys in aircraft design, 387
- American-British collaboration in the atomic field, 70
- hydrogen bomb experiments, 1
- technologists, 309
- Type Culture Collection at Washington, 222
- Amino-acids, 2, 325, 350
- sugars, 55, 256, 273
- Aminocaproic acid, 142
- Amphisan, 234
- Amplification of sound, 89
- Analysis of fibres, 141
- Andersonian Institution at Glasgow, 82
- Andrade, Prof., 103-4
- Anglo-American Aeronautical Conference, 330
- Anoxia, 125
- Anson, Lord, 259
- Anthrenus verbasci* (Varied carpet beetle), 134
- Antibiotics and cancer, 331
- and plant growth, 227
- , two new, 300
- Anti-shrink treatment (Belmont process), 170
- Anti-tuberculosis drug, 35
- Ants, 45-9
- , social behaviour of, 290
- Aphids, 19
- Aphis fabae*, 19
- Appert, Nicholas, 238

- Appleton, Sir Edward, 98, 299, 325
- Arco Proving Ground, 69
- Reactor Testing Station, 201
- Ardil, 129
- Argonne National Laboratory, U.S.A., 83, 201
- Aristotle, 23-5, 92-4, 238
- van Arkel, 109
- — process, 111
- Army Operational Research Group, 50
- Technical Schools, 52
- Artificial insemination on TV, 105
- light for horticultural purposes, 213
- manures applied to fish farming, 31
- rain-making in Australia, 130
- Asbestos, 235
- Ascorbic acid, 260
- Aspergillus niger*, 222
- Association of Scientific Workers, 233
- — Women Science Teachers, 300
- Astronomy, television in, 86
- Atmospheric composition, 241
- diffusion, 203-4
- Pollution Research Committee, 203
- —, 355
- Atom bomb, history of the, 1
- Atomic affairs and the Truman Administration, 70
- agreement, Roosevelt-Churchill, 71
- bomb, 154-5, 295
- centre at Oak Ridge, 361
- energy in Sweden, 228
- Atomic Energy Act, 1946, 167
- Commission, Australia's, 31
- — Research Establishment, Harwell, 168
- submarine, 227
- waste disposal, 361
- weapon test, British, 366
- weights, first table of, 319
- Atomism, 318
- Australia's Atomic Energy Commission, 31
- C.S.I.R.O., 303
- Institute of Science and Industry, 303
- Australian National University, 304
- Automatic calculating machines, 151
- digital computers, 152
- train control, 11
- — —, Underground's system, 12
- Avocets, breeding and nesting of, 248-9
- Axon, 191
- B
- Backward countries economic development, 346
- Bacteria, 240
- and fungi, freeze-drying of, 236
- in the soil, 296
- Bacterial polysaccharides, 271
- Bananas, controlled ripening of, 225
- Banks, Sir Joseph, 80
- Bankside power station project, 5
- Barnes, Dr. Harold, 83, 326
- Barrage Balloon station, Cardington, 19, 21
- Bartlett, Sir Frederic, 41
- Basilar membrane, 136
- Bath stone, 215
- Bearings, self-lubricating, 14

- Bearings, steel-backed, 14
- Beauharnois Power Canal, Canada, 38
- Bees, social behaviour of, 291
- Békésy, G. von, 137
- Bells, scientific interest in, 91
- Belmont process, anti-shrink treatment, 170
- 'Bemberg' rayon, 128
- Berkeley, *Giant Brains*, 151
- Bernard, Sir Thomas, 81
- Berzelius, 109
- Bessemer, Henry, 14
- Binet-Simon intelligence tests, 329
- Bioelectricity, 189
- Biology as a Career*, 389
- Birds, direction-finding in, 145
- , sun navigation theory, 149
- Bischoff direct cell, 36
- Blackcurrants, 'reversion' in, 133
- Blackman, Prof. G. E., 296
- Blast furnaces, 61
- Bloch, Prof. Felix, 31
- Blood Group Research Unit, 267
- , oxygen saturation of, 124
- plasma substitute, 274
- transfusions, 267
- 'Brain anaemia', 125
- Brain cancer, 309
- Breadmaking without agene, 195
- 'Breeder reactor', 69, 246
- Breeding of atomic fuel, 200
- Bristowe, Dr. W. S., 286
- Britain's atomic exports, 228
- first breeder pile, 69
- — 'Technological University', 86
- U 235 factory, 64
- British Association, 299, 325
- — Meeting address, 282, 325
- — New President, 98
- Film Institute, 233
- *Flora*, 131
- Hydromechanics Research Association, 39
- Instrument Industries Exhibition, 263
- Medical Journal, 267
- Non-ferrous Metals Research Association, 180
- Plastics Exhibition, 235
- wild flowers, 131
- Broadbent, D. E., 43
- Bronowski, Dr. J., 104
- Buckland, Frank (*Natural History of British Fishes*), 185
- Buffon, *Natural History* (1749), *History of the Earth* (1744), *Epochs of Nature* (1778), 94
- Bullard, Dr. Edward C., 225
- Bullen, Prof. K. E., 13
- C
- Cactoblastis cactorum*, 28-30
- Memorial Hall, 28
- Calotype, 112
- Canada's heavy-water pile, 105
- Cancer cure hope, 331
- Cancers, 305
- Carboniferous limestone, 216
- 'Carbonisation', 6
- of coal underground, 9

Careers for science graduates, 195, 299  
— in biology, 389  
— in Chemical engineering, 264  
Caries, dental, 201  
Carlson, Chester F., 175  
Carotenoid pigments, investigation of the natural, 55  
Carothers, Dr. W. H., 142  
Carrara marble, 217  
Cascade method of developing xerographic plate, 177  
Cassiopeia, constellation of, 284  
Catalogue of electrical, radio and electronic books, 163  
Catalytic cracker, 60, 301  
Cathode-ray oscilloscope, 87  
Cavendish Laboratory, 74, 322  
Cawood, Dr. Walter, 98  
Cellulose as basis for fibrous material, 127  
Cementing materials in the soil, 122  
Centralbureau voor Schimmelcultures, 219  
Central Public Health Laboratories, 98  
Challenger Expedition, 181  
Chardonnet, Count Hilaire de, 127  
— silk, 127  
Chemical analysis of fibres, 142  
— engineering, 243, 264  
— engineers, training of, 243–6  
— Research Laboratory, 3  
— weapons, 154  
Chemicals on the farm: a legal safety code, 168  
Cheralite: a new radio-active mineral, 98  
Cherwell, Lord, 167, 170  
*Chlorella*, 333  
— contamination of, 381  
— food value of, 383  
— harvesting of, 382  
Chlorophyll, 383  
Cholesterol, 77, 258  
Chromatography, development of, 53  
— wins a Nobel Prize, 2  
'Chromophores', 99  
Chromosomes, 97  
Chrysodine, 99  
Churchill, Sir Winston, 70, 167  
Cider making at Long Ashton Research Station, 133  
Cinemascope, 311, 317  
Cinerama, 311, 317  
Civil Defence, new weapons and, 154  
Clemo, Prof. G. R., 326  
Clipsham stone, 215  
Coal, carbonisation, 301  
— extraction of germanium from, 3  
— gas, 6, 58  
— —, drainage of, 59  
— —, uses for underground, 8  
Cobalt 60, 106  
— 'bomb', 162  
Cochlea, 136  
Cockcroft, Sir John, 105, 200, 357  
Coelacanth fishes, 113, 357  
Coke, metallurgical, 62  
Colour chemistry, O. N. Witt, father of, 99  
— television, 86  
Column chromatography, 53  
Commercial shellfish, 183  
Common cold virus, 358  
Commonwealth Bursaries Scheme, 275  
— Prickly Bear Board, 29  
— Scientific and Industrial Organisation, 303  
Comparative anatomy, 95  
Composition of the earth's core, 13  
Compositions of heat-resistant alloys, 160  
Conception of scientific theories, 23

'Conditional' operations in automatic digital computers, 152  
Conductive rubber, 65  
Connemara marble, 216  
Conservation of fish, 187  
Continuous filaments, 127  
*Coralloides*, 221  
Coriolis force theory, 149  
Corona spray apparatus, 176  
Corrosion at high temperatures, 161  
— of metals, 159  
— problems, 64  
Corti, organ of, 136  
Cortisone, 77  
— made in Britain, 31  
C.P.S. Emitron tube, 172  
Crack-detection, 160  
Creep in metal, 159  
*Crossopterygi*, 117  
Crumb size of soil, 120  
Cultivation of soil, 123  
Cuprammonium rayon, 127–8  
Cuthbertson, Dr. D. P., 325  
Cuvier (*Ossemens Fossiles*), 95  
*Cygnus*, constellation of, 284

**D**

Daguerreotype, 112  
Dalton, John, 318  
—'s Symbols, 319  
Darlington, Dr. C. D., 130  
Dartmoor granite, 217  
Darwin, Charles, 95–7, 238  
—, Erasmus, 95, 238  
Davey, Major-General B. C., 51  
Davies, G. R., 3  
Davis, Dr. Hallowell, 136  
Davy, Humphry, 82, 320  
Davytan direct cell, 36  
Day, D. T., 54  
DDT, 135–6  
— resistant strains of flies, 296  
Deacon, Dr. G. E. R., 138–9  
Dean, Gordon, 201  
Dearth of science teachers, 299  
Dee, John, 368  
Deep-sea prawns, 183  
Deficiency diseases of fruit trees, 133  
Deflocculation, 123  
Dehydration of meat, 296  
Delhi iron pillar, 14  
Dental decay, 201  
Depolarisation, 189–91  
*Der Bildungstrieb der Stoffe*, 53  
Descartes, 24  
'Descriptive' conception of scientific theories, 23–4  
Deterioration in timing, caused by fatigue, 41  
Dextrans, 274  
Diesel engines, 236  
—, Dr. Rudolf, 237  
Dimethyl phthalate (DMP), 234  
Diphasic wave, 191  
Direct fuel cells, 191  
Directivity of sound, 88–9  
*Discovery* investigations, 184  
— II, research ship, 185, 296  
Dispersal, aerial, of aphids, 19  
DNC (dinitro-ortho cresol), 168  
'Dosometers', 179  
Doust, Dr. John Lovett, 124  
Drainage of soil, 119–20  
*Drawings of British Plants*, 131  
D.S.I.R., 65  
—, Liaison Officer for Wales, 389  
—, Pest Infestation Laboratory of, 134  
—, Publications, 194

Duke of Edinburgh, 51, 81  
Du Mont Laboratories, 83  
Duralumin, 157  
Durand, M., 38

## E

Ear, 136–7  
Earth's core, composition of, 13, 240  
— origin, 240  
Earthworms: effect on soil structure, 122  
Echo-sounder, 332  
— trace, 174  
Economic importance of fungi, 222  
Edible fish, 185  
Edinburgh, Duke of, 51, 188  
Edison, Thomas, 233  
EDSAC, 153  
Effect of fatigue on muscular tissue, 40  
— weather on soil structure, 121  
Egg-laying by flash illumination, 212  
Egyptian granite, 218  
Egyptology, 264  
Elasmobranchs, 117  
Electric low-shaft blast furnaces, 62  
— space heating efficiency, 360  
— transmission systems, 335  
Electrical weedkiller, 210–12  
Electricity from wind power, 373  
— static, 321  
Electrocardiography, 189  
Electrocution of weeds, 210  
Electroencephalography, 189  
Electromyography, 189  
Electronic counting and computing, 180  
— -flash, 347  
— interpreter, 202  
Electrophonic organ, 87  
Electrostatic generators, 321  
Electrostatics, 321  
Elton, Sir Arthur, 194  
E.M.I. Research Laboratories Ltd., 172  
*Endeavour* Prizes, 130, 326  
Eniwetok, 1, 70  
Epinephrine, 75  
'Essentialist' conception of scientific theories, 23  
Euclid preface, 368  
*Euphausia superba*, 185–6  
Everest, conquest of, 264  
Experimental breeder pile, 69  
— transmitter for TV Students, 295  
Extraction of protein food from leaves, 200

**F**

Faraday, 292  
Faraday Society, 169  
—, *Transactions of*, 170  
*Farbenchemie*, 53  
Fatigue as cause of fractures of aeroplane tailplanes, 159  
— research on, 40  
Fibres, 127–9, 141–4  
Fibrillation potential, 191  
Fibrous molecules, 141  
15 MeV linear accelerator, 73, 180  
Fifty years of fruit research, 133  
Film and Science, 233  
Fin Whale, 184–5  
Fire Resistance of building structures, 296  
First Breeder Reactor, 246  
Fischer-Tropsch process, 8  
Fish farming and artificial manures, 31  
— movement of, by electricity, 130  
Flake metal powders, production of, 14  
Flash illumination and egg-laying, 212  
Fleck, Dr. Alexander, 225  
*Flora of the British Isles*, 131

Flower  
Flower  
Flying  
Food p  
11  
— sour  
— yeast  
Ford, H  
Forman  
Fossil  
Fox Ea  
6  
Fractur  
by  
Freeze  
Fringe  
Fruit, p  
Fuel ce  
Fuel co  
crat  
Fungi,  
Further  
Galile  
Galliu  
Gamma  
Gamm  
Gas fr  
— s  
— mas  
— turb  
— tu  
me  
— turb  
—  
Gasific  
Gay-Lu  
G.E.C.  
— Res  
Geiger  
30  
Genera  
Genera  
gra  
— spo  
Genes  
Geosyn  
German  
3,  
—, fro  
Gilber  
Glass-f  
Goppel  
Gorlov  
Graded  
Granite  
Grassla  
Greenla  
'Green  
Grid na  
G2 tur  
Guided  
Guy Co  
Handb  
Hard c  
Harpoo  
Harvan  
Harwel  
— line  
Hatfiel  
Hearin  
Heat, 8  
— pum  
Heatin

*Flower Book for a Pocket*, A, 131  
Flowers, Brian, 65  
Flying, fatigue in, 41  
Food production, effect of soil tilth on, 118

— sources, 379  
— yeast, production of, 199

Ford, Henry, 234

Formant, the, 88

Fossil coelacanths, 116

Fox Earth Coal Seam (Newman Spinney), 6

Fractures of aeroplane tailplanes caused by fatigue, 159

Freeze-drying of bacteria and fungi, 236

Fringe-finned fishes, 116-17

Fruit, pre-harvest drop in, 352

Fuel cells, 36

Fuel consumption, comparative, in aircraft, 386

Fungi, 219-22

*Further Illustrations of British Plants*, 131

## G

Galileo, 26

Gallium, 4

Gamma-ray isotope, 305

Gammexane, 270

Gas from coal seams, 58

— sludge, 60

— masks, 154-5

— turbine burns peat, 32

— turbine development and powder metallurgy, 17

— turbines for aeronautical purposes, 160

— — Royal Navy, 64

Gasification, underground, 6

Gay-Lussac, 320, 362

*G.E.C. Journal*, 3

— Research Laboratories, 4

Geiger-Müller counter, 179, 257, 263, 277, 309

Generating electrical energy, 36

Generation of electricity through underground gasification, 8

— spontaneous, 240

Genes, 97

Geosyncline, 216

Germanium, extraction from flue dust, 3, 4

— from coal, 3

Gilbert, William, 369

Glass-fibre, 235

Goppelsroeder, F., 3, 53

Gorlovka mine, 6

*Graded List of Science Films*, 195

Granites, 217

Grassland, improvement of, 270

Greenland whale, 184

'Green pressing' in powder metallurgy, 16

Grid navigation, 140

G2 turbine, 64

Guided missiles, 326

Guy Committee, report of, 52

## H

*Handbook of the British Flora*, 131

Hard carbides, 16

Harpoon gun (Kongsberg), 184

Harvard University, 309

Harwell's heavy-water pile, 69

— linear accelerator, 72

Hatfield Technical College, 64

Hearing, mechanism of, 136

Heat, 82

— pump in the dairy, 212

Heating of aircraft structures, effect of, 330

Heavy-water pile at Harwell, 69

Hecogenin, 78

Heifetz, Jascha, 89

Helium and neon, micro-analysis of, 56

— liquid, 292

Hench, Philip, 77

Heredity, 96-7

Hickling, Dr. C. F., 31

High-energy, X-rays, 71

— — medical benefit of, 73

High-pressure linkage, 7

High-speed wind tunnel, 64

Hiroshima, 155-6

Holroyd, Dr. Ronald, 194

Homing of racing pigeons, 147

Hooke, Robert, 94, 127

Hopkin, G. L., 64

Hopton Wood limestone, 216

Hormone weedkiller, 269

Hormones, 75, 350

Hornsby-Akroyd engine, 237

Howard, Eliot, 223

Hubble, Dr. E. P., 356

Human chimera, 267

— factors in industry, 194

Humber Laboratory, 65

Huxley, Dr. Julian, 295

— Prof., 104

Hydraulic transportation of coal, 38

Hydrogen bomb, 1, 70

*Hyraeotherium*, 96

## I

I.C.I.'s agricultural research station, 269

— film library, 195

— new research director, 194

— titanium plant, 225

Ideal insect repellent, 234

*Illustrations of the British Flora*, 131

*Impact*, 266

Imperial College of Science and Technology, 86

— — Tropical Agriculture, new principal for, 195

Impervious rock, 57

Indalone, 234

Indirect fuel cells, 36

*Industrial and Engineering Chemistry*, 202

— Application of Aerodynamic Techniques, The, 5

— stacks, sources of pollution, 203

Infiltration in powder metallurgy, 16

Infra-red microscopy and the image-converter tube, 131

— — sensitive films, 107

Ingle work-test, 77

Insect pests, asphyxiation of, 296

— repellent, 234

Institute of Biology, 332

— of Oceanography, 296

— of Physics, 264, 322

Institution of Chemical Engineers, 243, 264

Insulin, 75

Intelligence quotient, 329

International Council for the Exploration of the Sea, 187

Inter-stellar matter theory, 284

Investigation of sea floods, 162

Ion-exchange chromatography, 53, 56

— — Resins, 355

Iron-making blast furnace, 61

Isoniazid, 35

## J

Jackson, Prof. Willis, 98

Jet propulsion, 255

Johnson Matthey & Co., 4

Joint Congressional Committee on Atomic

Energy, 70

Jones, G. A., *Modern Applied Photography, High Speed Photography*, 112

Joule-Thomson Principle, 292

Journal of the American Chemical Society, 53

## K

Kamerlingh Onnes, 292

Kepler, 23, 27

Ketton stone, 215

Kew Herbarium, 264

Kleitman, Prof. N., 124

Klystron amplifier, 74

Krantz, Prof. J. C., 193

Krebs Cycle, 363

— Prof. Hans Adolf, 362

Krilium, 74, 122

Kroll, Dr. W. J., 109

— process, the, 109-10

Krupps, 16

Kwashiorkor, 31

## L

*Laboratoire Dauphinois d'Hydraulique*, 38

Lamarck, *Philosophie Zoologique*, 95

Larvikites, 218-19

*Latimeria chalumnae*, 113-15

'Latitude of forms', 26

Law of motion, 24

L.C.C. Research Fellowship, 295

Leaf protein, 199-200

Leguat, Francis, 223

Leukemias, 307

Life, on other planets, 239

— origin of, 238

Limestones, 215

Lind, James, 259

Linear accelerators, 71

Linkage, high-pressure, 7

Linnæus, 92, 94

Lipmann, F. A., 362

Lithium hydride, 1

Liver extracts, 297

Liverpool Observatory and Tidal Institute, 325

— School of Tropical Medicine, 325

— Tidal Institute, 137-8, 140

— University, 325

Lizard, rare New Zealand, 31

Lobster hatcheries, 183

Loch Sween experiments, 334

Lockspeiser, Sir Ben, 65

Lockyer, Sir Norman, 276

Lodge, Sir Oliver, 283

Loggerhead turtle (*Caretta caretta*), 209

Long Ashton Research Station, 133-5

Lord Cherwell retires, 389

Low-shaft blast furnaces, 62

Luxullianite, 218

Lyell, Sir Charles (*Principles of Geology*), 96

Lyophil process, 219

## M

Mach, Ernest, 250

— number, 385

*Macropoma lewisiensis*, 113

Maddison, John, 233

Maddock, I., 64

Magma (Molten rock), 216

Magnesium alloys, 160

Magnetic theory and bird navigation, 149

*Malania anjouanae*, 113-15

Malthus, Rev. T. R., 345

Manchester College of Technology, 37-8

*Manual of British Botany*, 131  
Manufacture of Film Base, 98  
Marbles, 216  
Marconi underwater television camera, 83, 84  
Marine fishponds, 334  
— foods, 332  
Markham Colliery, 38  
Marshall Plan, 71  
Martin, Dr. A. J. P., F.R.S., 2, 3, 53-6  
Massachusetts Inst. of Technology, 309  
Maupertuis, 94-5  
Mawsonia, 113  
McCartney bottles, 219  
Mechanical Handling Exhibition 1952, 83, 84  
Medical benefit of high-energy X-rays, 73  
— Research Council, 35  
— — —'s Blood Group Research Unit, 267  
Meek, Prof. J. M., 326  
MeV linear accelerators, 72-3  
*Meganyctiphantes norvegica*, 173  
Mendeleef, Gregor, 6  
Mendelism, 97  
*Merychippus*, 96  
*Mesohippus*, 96  
Metabolism, 258  
Metal gluing, 331  
Metaldehyde, 297  
Metallurgical coke, 62  
Metals for aircraft manufacture, 157-60  
Meteorological control of air pollution, 205  
— forecasting, 140  
— Office's new director, 171  
Methane, 57-60  
— used for, 60  
Metrovick's new director of research, 98  
Migration of birds, 145  
Military College of Science at Shrivenham, 49-52  
Milky Way, stars of, 4, 30, 283  
Mills, Purcell, Prof. Edward, 31  
Miniature jet starts bigger jets, 228  
Ministry of Fuel and Power, 7  
— Supply, 167  
— — —'s rocket range, 327  
Mistletoe, legends and life of, 370  
*Modern Applied Photography* (G. A. Jones), 112  
— navigation, 193  
— warfare, science in, 49  
Moffat, 213  
Molten rock material (Magma), 216  
Molybdenum, 161  
Moncrieff, R. W., 170  
Mont Louis experiments, 279  
Monte Bello bomb, 64, 194  
Motor car chassis construction, 339  
— development, 335  
— engines, 337  
— units (muscle-nerve system), 189  
Mount Vernon Hospital, Northwood, 162  
Movement of fish by electricity, 130  
Mullard Ltd., 73  
Muscle fibres, 189-92  
Musical acoustics, 88  
— instruments: effects of materials and varnish on, 90  
Mutual feeding of grubs and worker ants, 45  
M.V. *Calcanus*, 172-4  
Myxomatosis, 389  
*Muzus persicae*, 19

## N

National Coal Board, 38  
— Institute of Oceanography, 185  
— Institute for Medical Research, 2

National Physical Laboratory, 5  
— Smoke Abatement Society, 355  
— Type Culture Collection, 236  
Natural Gas, 57-8  
— History Museum, South Kensington, 209  
— — — of British Fishes (Buckland), 185  
Navigation of Birds, 147  
— — —, magnetic theory, 149  
— Today, 193  
Nebulae, clusters of, 30  
Neepsend Power Station model, 205  
Neon and helium, micro-analysis of, 56  
Neptunium 237, natural, 32  
'Nerve gases', 154  
*Neurospora crassa*, 222  
— *sitophila*, 222  
New anaesthetic, 193  
— Fellows of the Royal Society, 225-7  
— Fish Research Station, 65  
— varieties of fruits, breeding of, 134  
— weapons, 154  
Newton, Prof. Alfred, 224  
— Sir Isaac, 27, 318  
— *Principia Mathematica*, 27  
Nickell, Dr. L. G., 227  
Night Sky, 32, 64, 99, 130, 162, 193, 225, 262, 294, 356, 389  
Nobel Prize for Chemistry 1952, 2  
— — — 1953, 364  
— — — Physics, 1952, 31  
— — — 1953, 364  
— Prizes 1953, 362  
Non-Fickian diffusion, 204  
Non-static rubber, 66  
North Atlantic Right Whale, 184  
Norwegian syenite (larvikite), 217  
NRU Canadian heavy-water pile, 105  
NRX pile, 105-6  
Nuclear energy, course in, 264  
— power development, 297  
— — — units for aircraft, 330  
Nuffield Foundation, 275  
Nylon, 142-3

## O

Oak Ridge atomic centre, 361  
Ockham, Williams of, 25  
O.E.E.C., 63  
Oettinger, A. G., 153  
Oil of citronella, 234  
Oil-bearing sandstone, 57  
Oldest Technical College, 37  
Oliphant, Prof., 131  
Oliver and Schäfer, 75  
*On the Origin of Species*, 96  
Ophah or Moon-fish (*Lampris luna*), 209  
Operation Totem, 366  
Operational research, 266  
Oppenheimer, Prof. J. Robert, 131  
*Opuntia inermis*, 28  
Oresme, Nicole, 25-6  
Organ of Corti, 136  
Organic evolution, 238  
— — —, theory of, 92  
Ornamental stones, 214-18  
Oscillograph, cathode-ray, 87  
*Ostrea edulis*, 183  
Overfishing Convention, 187  
— problem, 185  
Owen, Richard, 95  
Oximeter, 124  
Oxygen and living soil, 118-19  
— apparatus, 264  
— enriched low-shaft blast furnace, 62  
— liquid, 292  
— saturation of blood, 124  
Oyster beds, replenishing of, 182-3  
— culture, 181

## P

Palladium, discovery and uses of, 342  
Palomar Observatory, 66  
— 200-inch reflecting telescope, 30, 283  
Paludina limestone (Purbeck), 216  
Pandalus borealis, 184  
Paneth, Prof. F. A., 7, 356  
Paper chromatography, 53  
— partition chromatography, influence of, on protein analysis, 2  
Parasites of plants, 370  
Parry, T. A., 64  
Partition chromatography, 53  
P.A.S. (pars-amino-salicylic acid), 35  
Pasteur, 238, 271  
Peat-burning gas turbine, 32  
Pears Cyclopaedia, 390  
Penfield, Dr. Wilder Graves, 64  
Penicillin, 273, 301  
*Penicillium notatum*, 222  
Pennant sandstones, 215  
Penney, Sir William, 366  
Periodontal disease, 202  
Perrin, M. W., 130  
Perry, Prof. James W., 202  
Pest Control Ltd., safety code worked out by, 168  
— Infestation Laboratory of the D.S.I.R., 134  
Petrie, Sir Flinders, 264  
Petroleum, 53-4  
— refining, 301  
Pezophaps solitarius (*Solitaire*), 223  
Phase-contrast microscope, 364  
Phosphate, fertiliser, 258  
Photography, scientific and technological uses of, 106  
Photomicrographs, 316  
Photomicrography, 347  
Photosynthesis, 257  
*Physalia physalis*, 206-7  
Physical Society Exhibition, 179  
— — — prizes for craftsmanship, 194  
Pineapple industry, 353  
Pirie, N. W., 200, 325  
Plankton, collection of, 187  
— nutritive value of, 333  
— photography of, 347  
Plant chimeras, 268  
— embryos, artificial culture of, 351  
— hormones, 350  
— metabolism, 241  
— pathogens, 219, 222  
Plastics, reinforced, 234  
— transformed by 'atomic-cooking', 194  
'Platforming' unit, 301  
Platinum, uses of, 342  
Plutonium, metallurgy, 71  
Pneumatic lift, 7  
Pocket calculating machine (Curta), 162  
Polarisation of cells, 189  
Pollution of the air, 203, 355  
Polymerisation, 143-4  
Polyphasic wave, 192  
Polysaccharides, 271  
Polythene, 60  
Population, increase in, 345  
Portable fluoroscope, 356  
Portland stone, 215  
Powder cloud method of developing Xerographic plate, 177-8  
— metallurgy, 14  
— — — and gas-turbine development, 17  
— — —, infiltration in, 16  
— — —, making components by, 15  
— — —, pressing and sintering in, 16  
Powell, Prof. C. F., 107  
Precipitation-hardening, 16  
Prevention of soil erosion by mulching, 122

Prickly p...  
Priestman...  
Principle...  
(Cuv...  
Proceedin...  
Eng...  
Progress...  
Protectiv...  
spr...  
Protein...  
— analys...  
grap...  
— food f...  
Psycholo...  
Univ...  
Ptolemy...  
Pumping...  
Purbeck...  
Pyrethr...  
Quantum...  
Queensla...  
miss...  
Racing p...  
Radar de...  
Radioact...  
— elem...  
— isotop...  
Radioact...  
Radio as...  
— carbon...  
— chem...  
— contr...  
— Indus...  
— isot...  
— in...  
— in...  
— sta...  
— physi...  
130  
— waves...  
Ramei...  
Ramsay...  
aster S...  
aw ma...  
ay, Joh...  
Redi, 23...  
ed Spie...  
egurgi...  
einfor...  
eissner...  
everbe...  
*habdo...*  
hipidis...  
inderp...  
ocket...  
— weap...  
ooseve...  
ene...  
otham...  
200  
Lowett...  
oyal In...  
— Milit...  
— Phot...  
— Soci...  
— Pr...  
— 's  
— Tech...  
Rumfor...  
kuther...  
Saint-H...  
Salt wat...  
Sandhu...

Prickly pear, 28-30  
Priestman engine, 236, 360  
Principle of the correlation of parts (Cuvier), 95  
*Proceedings of the Institution of Electrical Engineers*, 200  
*Progress in Metal Physics*, 160  
Protective clothing in use in agricultural spraying operations, 169  
Protein, 242  
— analysis, influence of paper chromatography on, 2  
— food from leaves, 199  
Psychological Laboratory of Cambridge University, 41  
Ptolemy, 24  
Pumping coal, 38  
Purbeck Marble, 216  
Pyrethrins, 234

#### Q

Quantometer, 180  
Queensland Prickly Pear Land Commission, 29

#### R

Racing pigeons, homing of, 147-8  
Radar detection of icebergs, 98  
Radioactive contamination, 156  
— elements, 305  
— isotopes, 324  
Radioactivity, 361  
Radio astronomy, 283  
— carbon, 276  
— chemical Centre at Amersham, 168  
— controlled crane grab, 84  
— Industry Council's awards, 355  
— isotopes, 179  
— in biology, 256  
— in medicine, 305  
— standards of protection for, 194  
— physics Laboratory of the C.S.I.R.O., 130  
— waves, 283

ramie fibre, X-ray examination, 142  
amsay, Sir William, 6  
aster Stereoscopy, 311, 317  
aw materials, conservation of, 358  
ay, John, 93  
edi, 238

ed Spider, control of, 355  
egurgitation of food by ants, 45-6  
enforced plastics, 234  
eissner membrane, 136

everberation, effect of, on acoustics, 89  
*habdoderm*, 113

hipidistia, 117  
inderpest, 236  
locker range at Woomera, 236  
— weapons development, 326

oosevelt-Churchill agreement on atomic energy, 71

rothamsted Experimental Station, 19, 74, 200, 269

lowett Research Institute, 2  
oyal Institution of Great Britain, The, 82

— Military College of Science, 130  
— Photographic Society, 107, 233

— Society, 275, 295  
— President, 326

— 's *Transactions*, 268  
— Technical College, 37-8, 82

umford, Count, 79-82, 130  
utherford Memorial Lecture, 195

#### S

Saint-Hilaire, Étienne Geoffroy, 95  
Salt water: effect on soil tilth, 123  
Sandhurst, 50

Sandstones, 214  
Sandy soil, rain damage to, 120-1  
Saprophytic moulds, 219  
Scaler, 179

Schmidt telescope-camera at Palomar, 30  
*School Flora*, 4, 131

Science and British Industry, 265  
— Film, 233

— War, 170  
— in Australia, 303  
— in modern warfare, 49

— in the U.S.A., 297  
— on Television, 103

— Masters Association, 300  
— in Scotland, 390

— Technologists' Association, 195  
*Scientific American*, 302

— Film Association, 194, 233  
— — Congress, 355

— *Research in British Universities*, 32

Scintillation counter, 179  
Scottish Marine Biological Association, 83  
— — Station, Milport, 172

Scurvy, 259

Sea as source of food, 181  
— floods, scientific problems of, 137

— otter, 184

Seaborg, Dr. Glenn T., 32

Seals, 184

Seismic waves, 139

Selenium, amorphous, 178

Serpentines, 218

17th-century dynamics, 23

Sewing machine for stitching blood vessels, 39

Shap granite, 217-18

Shinfield Field Station of the E.R.A., 210

Shock waves, 252

Shrink-proof wool, 170

Siemens, 6

Silkworm fibres, 127

Sleep, oxygen content of blood and depth of, 124

Sludge gas, 60

Slug killer, 297

Smith, Dr. Cyril, 71

Smith, Prof. J. L. B., 113

Smithsonian Report, *DISCOVERY* articles in, 98

Smoke and pollution of air, 203-4, 355

*Smokeless Air*, 193

— fuel, 355

Social behaviour in animals, 290

Society for Bettering the Condition of the Poor, 81-2

Soil aeration, 119

— blocks, 130

— conditioners, synthetic, 74, 122

— cultivation, 123

— erosion, prevention of, 122

— tilth and food production, 118

— warming, 210-13

Solar energy research, 279

Solitaire (*Pezophaps solitarius*), 223-4

Southwell, Sir Richard, 299

'Sovereign order of Nature, the', 92

Spectrograph, 264

Spence, R., 64

Sperm whale, 184

Spiders, enemies of, 288

— hunting, 286

— life history, 289

Stack pollution, 203-5

Stanford Microwave Laboratory, 74

Stanhope, calculating machines, 341

— Charles, 341

— printing presses, 341

Stars of the Milky Way, 30

Static electricity, 321

Staudinger, Prof. H., 364

Stereoscopic films, 311

— vision, 312

Sterols, 75-7

Stimulation of muscle fibres, 191

Stonehenge, 276

Storm surges, 138-9

Stradivarius, 89

*Streptomyces Lygroseopicus*, 221

*Streptomycin*, 35, 332

'Stretch-pressing' of metal sheets, 158-9

Study of birds, 223

Subsonic aircraft, 252

— air speed, 385

Suction trap for aphids, 20

Sun as compass, use of the, 147

— navigation theory, 149-50

Sun-fishes (*Orthagoriscus*)

Supersonic flight, 250

— flow, 250, 385

Surgery and television, 83-4

Sutton, Prof. O. G., F.R.S., 52, 171

Swingin and Pfiffer, 75

Swinton, Dr., 326

Syenites, 218

Synchrotron, 71

Synge, Dr. R. L. M., F.R.S., 2, 3, 53-6

Synthetic soil conditioners, 74

#### T

Tannin, influence of, on corrosion, 64

Tar oil technique for winter spraying of fruit trees, 133

Technical army schools, 52

— Optics Department of Imperial College, 180

— staff course at Shrivenham, 52

Teeth, care of, 202

Telecommunications Research Establishment, 72

Telescopes, photographic record of the heavens by, 107

Television, 83-6

— camera 80-in. lens, 296

— Society, 295

— underwater, 172-4

Templeman, Dr. W. G., 269

*Territory in Bird Life*, 223

Terylene, 141-3, 356

— fibre plant, 295

Theory of organic evolution, 92

Thermal stratification, 203

Thickback Sole (*Solea variegata*), 186

Thinking machines, 151

Thirring, Prof. Hans, 1

Thompson, Benjamin, 79-82, 130

3D film camera, 263

— films, 311

Thyroid cancer, 307

Thyroxine, 75, 307

Tiger Mine, Hume, Missouri, 9

Tilth, 118-23

Titanium, characteristics of, 109

— melting of, 110, 160

— production of, 109-10

Tizard, Sir Henry, 171

Tolylene blue and red, 99

Torulopsis, 199

Town gas, 6

Toxic chemicals, 168

*Transactions of the Faraday Society*, 170

Translation by electronic means, 202

Transonic speed region, 254

Travelling-wave type accelerator, 71

Travertine, 218

Tribo, electricity, 175, 177

Triphasic wave, 191

Tritium, 1

Tropacolines, 99

Truman Administration, atomic affairs and the, 70  
Tuatara (*Sphenodon*), 31, 116  
Tufaceous limestone, 218  
Turbo-jet engined aircraft, 386  
Turner, C. J., 64

#### U

Ultra-high-speed cameras and atomic explosions, 194  
Ultrasonic concrete tester, 263  
— echo sounding, 326  
— — whale-finders, 31  
Underground gasification, 6  
— generation of electricity, 8  
— synthesis of petrol, 8  
—'s system in automatic train control, 12  
Underwater films, 326  
— pictures, relaying from ship to shore, 31  
— television, 83, 172, 326  
UNESCO, 266  
— Kalinga Prize, 355  
Unicellular algae, 333, 379  
Uranium 235, 1, 64, 69, 105, 168 201  
— ore detector, 263  
U 238, 168, 201  
U.S. Army Signal Corps Engineering Laboratories, 175  
— Atomic Energy Commission, 1, 71, 201  
— Bureau of Mines, 109  
— Food and Drug Administration, 169

#### V

Vaccines, 274  
Vacuum techniques, 180

Van der Graaff, 321  
Vandenberg, Senator, 70  
Varied Carpet Beetle, 134  
*Vellela spirans*, 206-7  
Vicara, 127  
Vigilance tasks in flying, 42-3  
Violet-snails (*Ianthina*), 209  
Viscose process, 128  
— rayon, 127-8  
Viscosity of water, 120

W

Wain, Prof. R. L., 168  
Waksman, Dr. Selman A., 331  
Wallace, Prof. Tom, 133  
Wansbrough-Jones, Dr. O. H., 170  
Wasps, social life of, 291  
— spider-hunting, 288  
Wave-forms of sounds, 91  
Waverley, Lord, 167  
*Weather*, 138  
Weather: effect on soil structure, 121  
Weedkillers, new selective, 356  
— selective, resistance to, 296  
Weeds, control of, 352  
— eradication of, 210  
Wellcome Foundation, 130, 264  
— Sir Henry, 264  
Westerdijk, Dr. Johanna, 219  
Whalefinders, ultrasonic-echo, 31  
Whales, 184  
Whitaker, A., 225  
*Whiteia*, 113  
*WHO Newsletter*, 201  
Wilberforce, William, 81

Wild flowers, British, 131  
Wimshurst machine, 321  
Wind instruments, 90  
— power, 373  
— — plants, 375  
— speeds, 373  
— tunnels and industrial problems, 5  
— —, high-speed, 64  
Winter egg production, 212  
— spraying of fruit trees, 133  
Witt, O. N., father of colour chemistry, 99  
Wollaston, Dr. W. H., 14, 342  
— Medal, 342  
Wood ant, 48  
— Sir John, 167  
Woodlice, British, 295  
*Wool-shrinkage and its Prevention*, 170  
'Woolly Bear', 134  
Woomera atomic tests, 367  
— rocket range, 326  
Wound hormones, 351  
Wren, Sir Christopher, 215  
Wright Brothers, 384  
— Prof. W. D., 180

#### X

Xerographic process, 175-9  
Xero-radiography, 175  
X-rays, high-energy, 71  
— used for determination of crystal structure, 141

#### Z

Zernike, Prof. F., 364  
Zinn, W. H., 201

## BOOKSHELF INDEX

Barber, Bernard: *Science and the Social Order*, 361  
Barer, R.: *Lecture Notes on the Use of the Microscope*, 262  
de Beer, G. R.: *Embryos and Ancestors*, 231  
Beet, E. Agar: *The Sky and its Mysteries*, 100  
Burgess, Eric: *Rocket Propulsion*, 33  
Cheeseman, E.: *Insects Indomitable*, 359  
Christensen, Clyde M.: *The Molds and Man*, 66  
*Common Farm Weeds Illustrated*, 68  
Cook, G. B. and Duncan, J. F.: *Modern Radiochemical Practice*, 32  
Cousteau, J.-Y. and Dumas, F.: *The Silent World*, 360  
Crombie, A. C.: *Robert Grosseteste and the Origins of Experimental Science 1100-1700*, 229  
Crombie, A. C.: *Augustine to Galileo: The History of Science A.D. 400-1650*, 163  
Crowther, J. G.: *British Scientists of the Twentieth Century*, 229  
Davidson, Dr. Martin: *Astronomy for Everyman*, 132  
Diebold, John: *Automation: The Advent of the Automatic Factory*, 293  
Diringer, David: *The Hand Produced Book*, 390  
Ekman, Sven: *Zoogeography of the Sea*, 132  
Evans, David S.: *Teach Yourself Astronomy*, 359  
Feinberg, J. G.: *The Atom Story*, 33  
Findlay, W. P. K.: *Dry Rot and other Timber Troubles*, 392

Firsoff, V. A.: *Our Neighbour Worlds*, 100  
Flood, W. E. and West, Michael: *An Explaining and Pronouncing Dictionary of Scientific and Technical Words*, 33  
Gamow, Prof. George: *The Creation of the Universe*, 100  
Gamow, G.: *Mr. Tompkins Learns the Facts of Life*, 328  
Gheerbrant, Alain: *Impossible Adventure*, 390  
Gibbs-Smith, C. H.: *A History of Flying*, 392  
Glasstone, S., and Edlund, M. C.: *The Elements of Nuclear Reactor Theory*, 293  
Grey, Walter, Dr. W.: *The Living Brain*, 328  
Harvey, N. P.: *The Rose in Britain*, 196  
Holland, D. J.: *Weather Inference for Beginners*, 262  
Hunsaker, J. C.: *Aeronautics at the Mid-Century*, 293  
Huxley, Julian: *Evolution in Action*, 163  
Langdon-Davies, John: *Westminster Hospital 1719-1948*, 33  
Lapage, Geoffrey: *Parasitic Animals*, 66  
Larsen, Egon: *An American in Europe: The Life of Sir Benjamin Thompson, Count Rumford*, 358  
Leutscher, Alfred: *Vivarium Life*, 230  
Lewis, Roy and Maude, Angus: *Professional People*, 100  
Lorenz, Konrad, Z.: *King Solomon's Ring*, 230  
Ludovici, L. J.: *Fleming: Discoverer of Penicillin*, 68  
Madge, John: *The Tools of Social Science*, 294

Manley, Prof. Gordon: *Climate and the British Scene*, 294  
McKie, Douglas: *Antoine Lavoisier*, 66  
Menzel, D. H.: *Flying Saucers*, 359  
Meteorological Office, Air Ministry: *Climatological Atlas of the British Isles*, 230  
Nebblette, C. B.: *Photography: Its Materials and Processes*, 392  
Pharmaceutical Press Publication: *The Extra Pharmacopoeia*, Vol. I, 359  
Prandtl, L.: *The Essentials of Fluid Dynamics*, 68  
Raistrick, Arthur: *The Darbys of Colbrookdale. Dynasty of Iron Founders*, 137  
Ramsbottom, John: *Mushrooms and Toadstools*, 390  
Ricketts, E. F. and Calvin, J.: *Between Pacific Tides*, 294  
Rodd, S.: *Photo-Electric Multipliers*, 35  
Rodker, Francis: *A Day with the Film Makers*, 230  
Ryan, Cornelius: *Across the Space Frontier*, 33  
Spear, F. G.: *Radiations and Living Cells*, 229  
Starr, A. T.: *Radio and Radar Techniques*, 132  
Sutton, O. G.: *Micrometeorology*, 196  
United Nations Publications: *An International Bibliography on Atomic Energy*, Vol. 2, *Scientific Aspects*, 67  
Wild, F.: *Estimation of Organic Compounds*, 229  
Winter, H. J. J.: *Eastern Science*, 165  
Wright, Helen: *The Great Palomar Telescope*, 196

ems, 5

emistry, 99

ion, 170

of crystal

te and the  
isier, 66  
359  
Ministry:  
the British

Its Mater-

ation: *The  
359  
of Fluid*

ys of Col-  
unders, 13:  
ooms an

: Between  
pliers, 35  
in the Fil  
the Spac

iving Cells,

Techniques,

gy, 196

An Inter-

nic Energy,

anic Com-  
e, 165  
Palomar